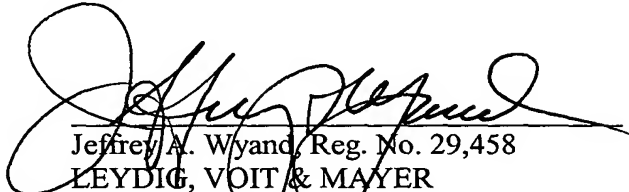


REMARKS

The foregoing Amendment corrects translational errors and conforms the claims to United States practice. No new matter is added.

Respectfully submitted,



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Date August 4, 2003
JAW:kas
Amendment Preliminary (Revised 7/29/03)

SPECIFICATION AMENDMENTS

Replace the paragraph beginning at page 1, line 19 with:

In this thermal processing apparatus the heating furnace can receive a processing gas having a temperature adjusted to stabilize the heating furnace's internal temperature so that each semiconductor wafers can be processed with a more uniform temperature ~~attained in each of their respective planes~~ for each substrate as well as between ~~their substrates~~ each substrate. Furthermore, it can reduce or eliminate a difference in temperature between the processing gas and a semiconductor substrate so that the semiconductor wafer can be processed without impaired uniformity in temperature ~~in the plane~~ and the processing gas supplied can also be free of variation in temperature to allow semiconductor wafers to be each processed without variation in temperature.

Replace the paragraph beginning at page 1, line 30 with:

Japanese Patent Laying-Open No. 6-177056 discloses a gassing apparatus which provides heating to ~~uniform~~ a uniform condition on a wafer for processing. This apparatus includes a processing chamber having an input/output port allowing an object to be processed to be input and output, a gas line connected to the processing chamber to supply a processing gas, a susceptor provided in the processing chamber to support the object to be processed, a plurality of divided heaters provided opposite the object supported by the susceptor to heat ~~the susceptor's~~ each different zone of the susceptor, and a controller controlling each divided heater individually to correspond to measurement data received from a device measuring a processing condition for the object processed in the processing chamber.

Replace the paragraph beginning at page 2, line 17 with:

As disclosed in Japanese Patent Laying-Open No. 5-251456, however, the thermal processing apparatus only ~~adjust~~ adjusts the temperature of a processing gas introduced into the heating furnace to stabilize the furnace's internal temperature. It does not consider any ~~effects that~~ other conditions of the processing gas have on semiconductor wafers' quality. As such, it cannot stabilize the wafers' quality based on the other conditions.

Replace the paragraph beginning at page 2, line 23 with:

Furthermore, as disclosed in Japanese Patent Laying-Open No. 6-177056, the gassing apparatus measures, as a condition of an object processed in the processing chamber, a

thickness of a processed film formed on a wafer and controls in temperature the plurality of divided heaters in a plasma chemical vapor deposition (plasma CVD) apparatus. Since the processed film's thickness is referred to to control the heaters' temperature, the gassing apparatus is not applicable to semiconductor processing apparatuses other than a CVD apparatus and the like performing a thin-film formation process.

CLAIM AMENDMENTS

1. (Currently Amended) An apparatus for processing a semiconductor wafer arranged in a chamber having an inlet for introducing a fluid and an outlet for exhausting ~~said the~~ fluid, ~~the said~~ apparatus comprising:

a detection portion detecting humidity in ~~said the~~ chamber; and
a control portion controlling a humidity adjustment device in accordance with the humidity detected by said detection portion.

2. (Currently Amended) The apparatus according to claim 1, wherein said control portion calculates ~~said detected~~ the humidity detected as an instruction value for ~~said the~~ humidity adjustment device and, in accordance with ~~said the~~ instruction value, controls ~~said the~~ humidity adjustment device.

3. (Currently Amended) The apparatus according to claim 1, wherein:
said detection portion detects temperature and humidity in ~~said the~~ chamber; and
said control portion calculates ~~said detected~~ the temperature and humidity detected as an instruction value for ~~said a~~ temperature and humidity adjustment device and, in accordance with ~~said the~~ instruction value, controls ~~said the~~ temperature and humidity adjustment device.

4. (Currently Amended) An apparatus for processing a semiconductor wafer arranged in a chamber, said apparatus ~~being provided with~~ comprising:

a plurality of heaters controllable in temperature for each of a plurality of sections of a surface bearing ~~said a wafer, said apparatus comprising~~;

a measurement portion for measuring a dimension of a pattern of a processed wafer in said apparatus, ~~as correlated to said section~~ the sections;

a detection portion for detecting temperature ~~in a vicinity of proximate each of~~ said ~~heater~~ heaters;

a calculation portion for calculating a temperature instruction value for ~~said each~~ heater of each ~~said section~~ of the sections from ~~said the~~ dimension of ~~said the~~ pattern correlated ~~to said section~~ with the sections, measured by said measurement portion; and

a control portion controlling said ~~heater~~ heaters of each ~~said section to allow said~~ detected of the sections so the temperature ~~to attain said calculated~~ reaches the temperature instruction value calculated.

5. (Currently Amended) The apparatus according to claim 4, further comprising a storage portion ~~previously~~ storing a temperature table indicating a variation in dimension of a pattern ~~for a per unit temperature of said heater~~, wherein said calculation portion calculates a variation ~~to allow said~~ in a measured dimension of said ~~so the pattern to attain~~ reaches a target value of ~~said the dimension of said the pattern and calculates said the temperature instruction value from said-calculated the variation calculated and said-stored the temperature table stored.~~

6. (Currently Amended) An apparatus for processing a semiconductor wafer arranged in a chamber, said apparatus ~~being provided with~~ comprising:

a plurality of heaters controllable in temperature for each of a plurality of sections of a surface bearing ~~said a wafer, said apparatus comprising:~~

a receive portion connected to a measurement device ~~to receive~~ for receiving from ~~said the~~ measurement device a dimension of a pattern of a processed wafer in said apparatus, measured by ~~said the~~ measurement device, as correlated to ~~said section the sections;~~

a calculation portion for calculating a temperature instruction value for a heater of each section from the dimension of the pattern correlated to ~~said the corresponding~~ section and received from said receive portion; and;

a transmit portion for transmitting ~~said the~~ temperature instruction value to a temperature processing device controlling a temperature ~~in a vicinity of~~ proximate said heater ~~to attain said so the temperature reaches the~~ calculated temperature instruction value.

7. (Currently Amended) An apparatus for processing a semiconductor wafer arranged in a chamber, ~~there being provided~~ said apparatus comprising:

an exposure device arranged at a position opposite ~~said a wafer, capable of for~~ controlling exposure in ~~amount for~~ each of a plurality of sections, ~~the apparatus comprising:~~

a measurement portion for measuring a dimension of a pattern of ~~said a wafer~~ processed in said apparatus, ~~as and~~ correlated to ~~said section the sections;~~

a calculation portion for calculating an exposure instruction value for each section from the dimension of the pattern measured by said measurement portion, ~~as~~ correlated to ~~said section the sections;~~ and

a control portion for controlling ~~said the~~ exposure ~~in amount~~ for each ~~said~~ section so that said exposure device provides an ~~amount of~~ exposure corresponding to ~~said-calculated the exposure instruction value calculated.~~

8. (Currently Amended) The apparatus according to claim 7, further comprising a storage portion ~~previously~~ storing an exposure table indicating a variation in dimension of a

pattern for a unit exposure provided by said exposure device, wherein said calculation portion calculates a variation ~~to allow said measured~~ of the dimension of said pattern measured to ~~attain reach~~ a target value of ~~said the dimension of said the pattern~~ and calculates ~~said the~~ exposure instruction value from ~~said calculated~~ the variation calculated and ~~said stored~~ the exposure table stored.

9. (Currently Amended) An apparatus for processing a semiconductor wafer arranged in a chamber, ~~there being provided~~ said apparatus comprising:

an exposure device arranged at a position opposite ~~said a wafer, capable of for~~ controlling exposure ~~in amount~~ for each of a plurality of sections, ~~the apparatus comprising:~~

a receive portion connected to a measurement device ~~to receive~~ for receiving from ~~said a measurement device~~ a dimension of a pattern of a processed wafer in said apparatus measured by ~~said the measurement device, as~~ correlated to ~~said section~~ the sections;

a calculation portion for calculating an exposure instruction value for a heater of each section from the dimension of the pattern correlated to ~~said section~~ the sections and received from said receive portion; and

a transmit portion for transmitting ~~said the~~ exposure instruction value to an exposure processing device controlling ~~said the exposure in amount~~ to ~~attain said calculated~~ reach the exposure instruction value calculated.

10. (Currently Amended) An apparatus for processing a semiconductor wafer arranged in a chamber having an inlet for introducing a fluid and an outlet for exhausting ~~said the fluid, said apparatus being provided with~~ comprising:

a plurality of heaters controllable in temperature for each of a plurality of sections of a surface bearing ~~said a wafer, said apparatus comprising:~~

a first detection portion for detecting temperature and humidity in ~~said the~~ chamber;

a first control portion for controlling a temperature and humidity adjustment device in accordance with the temperature and humidity detected by said first detection portion;

a measurement portion for measuring a dimension of a pattern of ~~said a wafer~~ processed in said apparatus, ~~as~~ correlated to ~~said section~~ the sections;

a second detection portion for detecting temperature ~~in a vicinity~~ proximate of each of ~~said heater~~ heaters;

a calculation portion for calculating a temperature instruction value for ~~said each~~ heater of each ~~said section~~ from the dimension of the pattern measured by said measurement portion, ~~as~~ correlated to ~~said section~~ the sections; and

a second control portion for controlling said ~~heater~~ heaters of each ~~said section to allow said detected~~ of the sections so the temperature to attain said calculated detected reaches the temperature instruction value calculated.

11. (Currently Amended) An apparatus for processing a semiconductor wafer arranged in a chamber having an inlet for introducing a fluid and an outlet for exhausting ~~said the fluid, there being provided~~ said apparatus comprising:

an exposure device arranged at a position opposite ~~said a wafer, capable of for~~ controlling exposure ~~in amount~~ for each of a plurality of sections, ~~the apparatus comprising:~~

a detection portion for detecting temperature and humidity in ~~said the~~ chamber;

a first control portion for controlling a temperature and humidity adjustment device in accordance with the temperature and humidity detected by said detection portion;

a measurement portion for measuring a dimension of a pattern of ~~said a~~ wafer processed in said apparatus, ~~as correlated to said section~~ the sections;

a calculation portion for calculating an exposure instruction value for each section from the dimension of the pattern measured by said measurement portion, ~~as correlated to said section~~ the sections; and

a second control portion for controlling ~~said the~~ exposure ~~in amount~~ for each ~~said section to allow~~ of the sections so exposure by said exposure device ~~to attain said calculated reaches the~~ exposure instruction value calculated.

12. (Original) The apparatus according to claim 1, corresponding to a photolithography apparatus using a chemically amplified resist.

13. (Original) The apparatus according to claim 4, corresponding to a photolithography apparatus using a chemically amplified resist.

14. (Original) The apparatus according to claim 6, corresponding to a photolithography apparatus using a chemically amplified resist.

15. (Original) The apparatus according to claim 7, corresponding to a photolithography apparatus using a chemically amplified resist.

16. (Original) The apparatus according to claim 9, corresponding to a photolithography apparatus using a chemically amplified resist.

17. (Original) The apparatus according to claim 10, corresponding to a photolithography apparatus using a chemically amplified resist.

18. (Original) The apparatus according to claim 11, corresponding to a photolithography apparatus using a chemically amplified resist.

ABSTRACT AMENDMENT

Replace the Abstract with:

A photolithography apparatus includes: an air supply line supplying an air to a chamber processing a wafer; a temperature and humidity adjuster ~~provided to~~ for the air supply line; a temperature and humidity monitoring sensor sensing temperature and humidity internal to the chamber; and a controller connected to the temperature and humidity monitoring sensor and the temperature and humidity adjuster to control the temperature and humidity adjuster to supply the chamber via the air supply line with an air having the same temperature and humidity as ~~those of~~ the air in the chamber detected by the temperature and humidity monitoring sensor.